



## INTERACTIVE TECHNOLOGIES GROUP, INC.

Innovative Approaches in Manpower

presented for



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# The Challenge

- Client: A Global Defense Command
  - CONUS and OCONUS Units
  - Disparate Installation Configurations
  - Disparate Staffing and Procedures
  - Disparate Regulatory Authorities
- Objective: Dynamic Functional Models
  - Data Driven
  - Scientifically Based
  - Holistic in Scope

# The Challenge

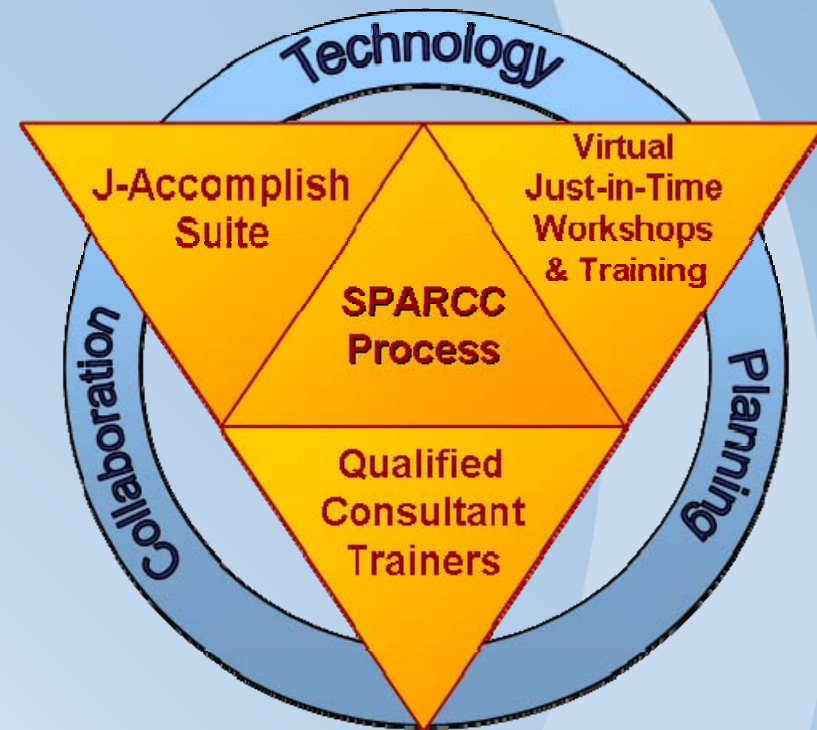
- Constraints
  - 67 Global Locations
  - No Travel Budget
  - Minimal Historical Data
  - Consensus
- Data Segmentation
  - 12 functional units
  - 6 installation configurations

# Four Key Questions

- What do we produce?
- How do we produce it?
- How much do we produce?
- Who is producing it?

# SPARRC™ Methodology

**S**ystem  
**P**rocess  
**A**ssessment  
**R**e-engineering  
**R**edesign  
**C**omparison



# SPARRC™ Methodology

## Six Phases of SPARRC™

1. Study Planning
2. Organizational Analysis
3. Functional Analysis
4. Work Measurement
5. Analysis
6. Reporting





# ITG's Technical Approach

- SPARRC™ Methodology
- Data Collection Virtual Workshops
  - Leverage J-Accomplish™ Technology
  - Maximize SME Participation
  - Immediate Results Validation
  - Minimize Workflow Interruption
  - Elimination of Travel Expense



# ITG's Technical Approach

- Verified and Validated existing WBS
- Conducted Primary Measurement
  - 9 CONUS / 5 OCONUS units
  - (3) One-week sessions
- Developed Preliminary Analysis
- Conducted Secondary Measurement
  - 36 CONUS / 17 OCONUS units
  - (5) One-week sessions
- Performed C&R Workload Analysis

# Enabling Technology



- Web-based suite of analytical tools
  - Speeds deployment and implementation
  - Enhances collaboration
  - Broader data collection reach
- Combines qualitative and quantitative
  - Real-time analysis
  - Historical, current and future views
- Fact-based decision making

# JAWWS™ Functionality

- Patent-Pending Technical Innovations
  - WARPfactors™
  - JAWWS™ Optimizer
  - Process-Skills Competency Bridge
- Integrated analytics
- Scenario-based models

# JAWWS™ Functionality

Basic Manpower Calculation:

$$\text{Hours} = \Sigma(\text{Output Frequency} * \text{Cycle Time})$$

or

$$Y = \Sigma (AF * CT)$$

Fractional FTE Calculation:

$$\text{FTEs} = \text{Hours} / \text{Manpower Availability Factor}$$

Or

$$\text{FTE} = Y / \text{MAF}$$

# JAWWS™ Functionality

- WARPfactors™
  - Workload Accelerated Requirements Processing
  - Correlation and Regression Analysis
    - Support for multiple locations
  - Higher Granularity
    - Workload segmented by Work Outputs
  - Scenario Modeling
    - Generates required manpower
    - Estimates projected Work Output production
    - Leverages Skills Percentages

# JAWWS™ Functionality

- WARPfactors™

- Programmable Staffing Standards

- Segmented by Work Output
    - Compound models

$$Y_c = \{ \underline{a_1 + b_1x_1} \} + \{ \underline{a_2 + b_2x_1 + c_2x_{12}} \} + \{ \underline{x_2 / (a_3 + b_3x_2)} \}$$

**Output1**

**Linear**

**Output2**

**Parabolic**

**Output3**

**Ratio Curve**

- Segmentation Benefits

- Provides higher granularity
  - Improves standards reusability

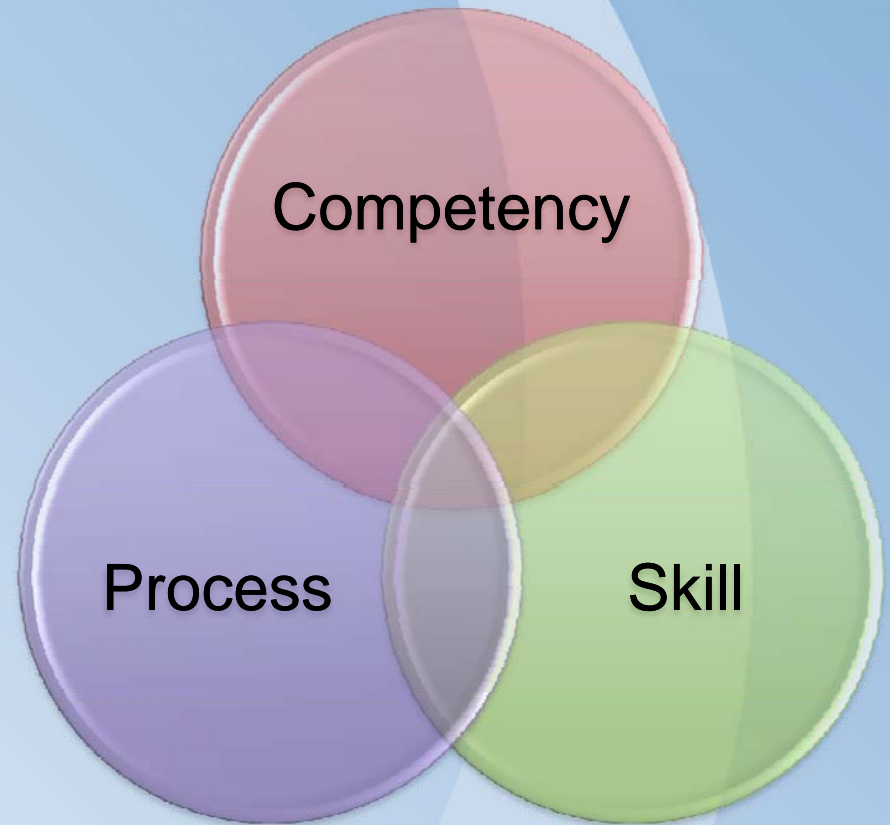
# JAWWS™ Functionality

- JAWWS™ Optimizer
  - Central Concepts
    - Process Differentiation
    - Least Cost Skills
    - MIP Minimization
  - Objective equation formulation
    - Coefficients based on hourly rates
    - Integer/Non-integer based on contractibility
  - Constraints
    - Unique/Blended Skill-Process Relationship
    - Unskilled Processes



# JAWWS™ Functionality

- Competency Bridge
  - Competencies act as a bridge between Processes and Skills
  - Informs the baseline Skills analysis
  - Informs the JAWWS™ Optimizer



# The Results

- Participation by over 300 SMEs
- 12 separate functional areas
- Functional Models Developed: 7
  - CONUS-Troop: 2
  - CONUS-Industrial: 1
  - CONUS-School: 1
  - CONUS-HQ: 1
  - OCONUS-Europe: 1
  - OCONUS-Pacific: 1

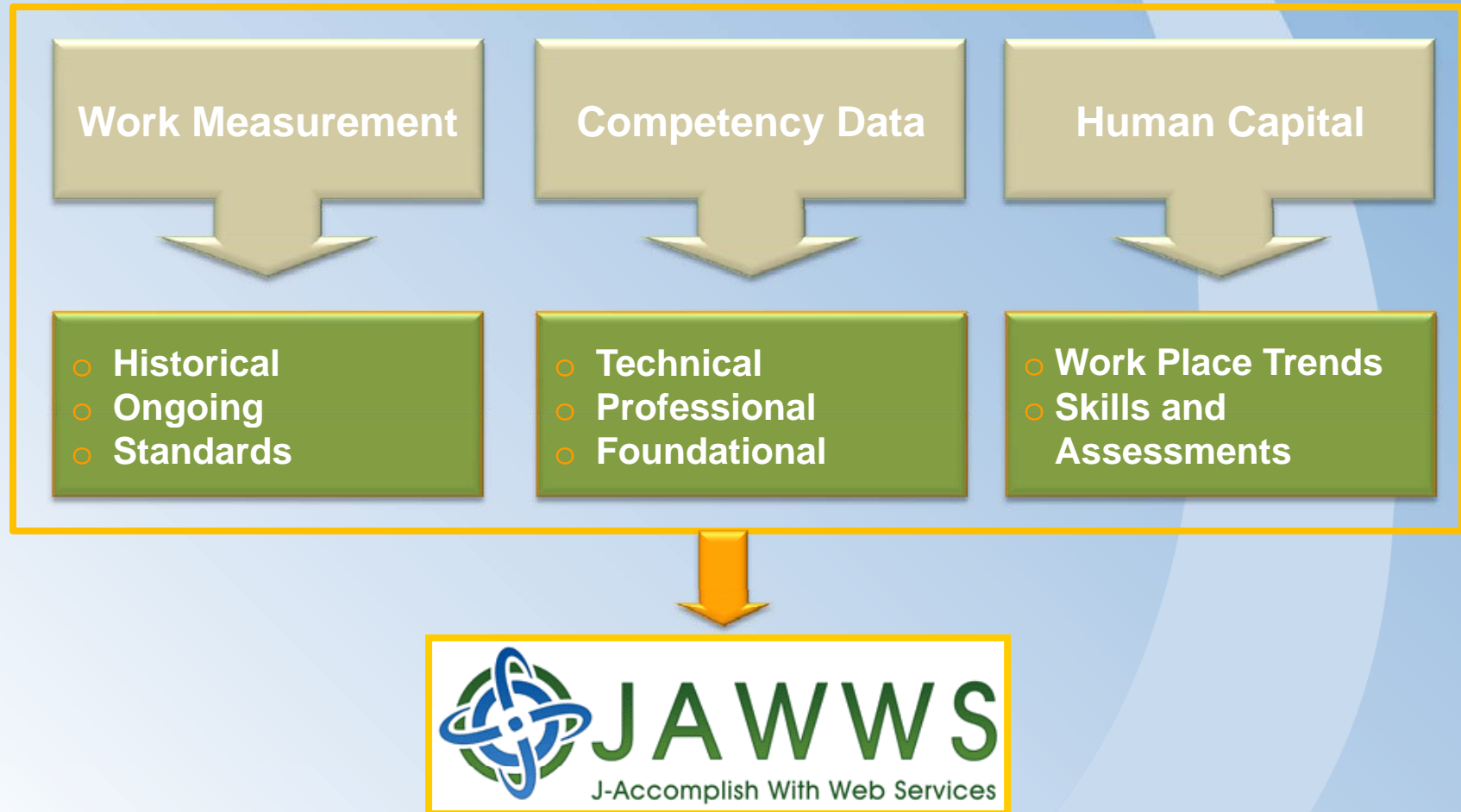
# The Results

- Net Change: 178 additional FTE's
  - CONUS-Troop: -7
  - CONUS-Industrial: +109
  - CONUS-School: -28
  - CONUS-HQ: +4
  - OCONUS-Europe: +75
  - OCONUS-Pacific: +25
- Models currently being implemented

# Backup

The background of the slide features a dark blue header bar at the top. Below this, the main area is filled with a light blue gradient. A vertical green bar is positioned on the left side. A large, light blue curved shape, resembling a stylized 'C' or a partial circle, is located on the right side of the slide.

# JAWWS™ Data Inputs



# JAWWS™ Information Consumers



Manpower

Training

Human Resources

- Staffing Standards
- Manpower Costing
- Pareto Analysis

- Training Needs
- Process Improvement
- Best Practices

- Competency Gaps
- Hiring Priorities
- Staff Development

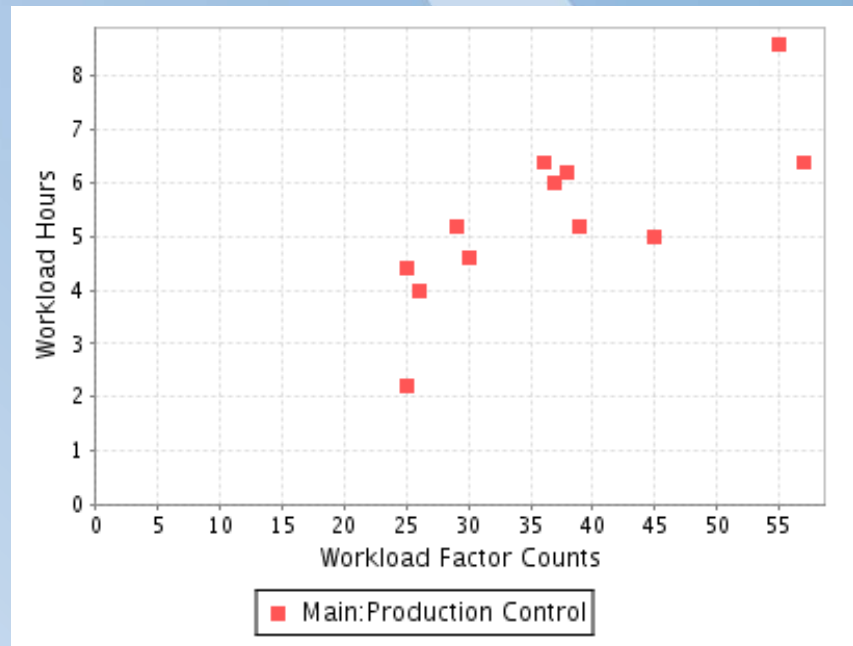
# Enabling Technology





# JAWWS™ Functionality

- WARPfactors™
  - Regression Types
    - Linear
    - Parabolic
    - Power Curve
    - Ratio Curve



Type	a	b	c	Syx	COD	COC	COV	FTest	TTest	Correlate
Linear	0.0077	0.0233		0.2979	0.9603	0.9800	0.0677	822.6660		<input checked="" type="radio"/>
Parabola	--	--	--	--	--	--	--	--	--	
Ratio	49.7410	-0.0357		0.4422	0.9125	0.9553	0.1005	354.7786		<input type="radio"/>
PowerCurve	0.0165	1.0659		0.3219	0.9536	0.9765	0.0732	699.4913		<input type="radio"/>

# JAWWS™ Functionality

## Workload Scenario Report Filter

StaffingEquation:  $Y = 14.2146 + 1.8148X_{17}$

Where:

- $X_{17}$  = Location Offices

\* Select Cost Center for Manpower Model:

-- Make Selection Here --  
ITDAV [IT Support Department]  
IT [Information Technology Support]

### Please provide counts for the following Workload Factors...

\*  $X_{17}$  Location Offices [OFF]

12

Definition:

### Please provide counts for the following Work Outputs...

\* IT: 1.2. A user desktop/laptop maintenance action performed. [UOM: Hour(s)]

120

Definition:

\* IT: 1.3. A work order processed [UOM: Unit(s)]

213

Definition:

Generate Report

# JAWWS™ Functionality

**WorkOutput:**IT: 1.1. A server maintenance action performed

Process	CycleTime	Frequency	
IT: 1.1.1.0.0. Perform server maintenance	1.0000	35.9922	
Skill	Hours	Skill%	CalcFTE
Database Support Analyst I [DSA-01]	35.9922	100.00	0.2482

**WorkOutput:**IT: 1.2. A user desktop/laptop maintenance action performed.

Process	CycleTime	Frequency	
IT: 1.2.1.0.0. Peform user desktop maintenance	1.0000	120.0000	
Skill	Hours	Skill%	CalcFTE
Database Support Analsyst II [DSA-02]	60.0000	50.00	0.4138
Database Support Analyst I [DSA-01]	60.0000	50.00	0.4138

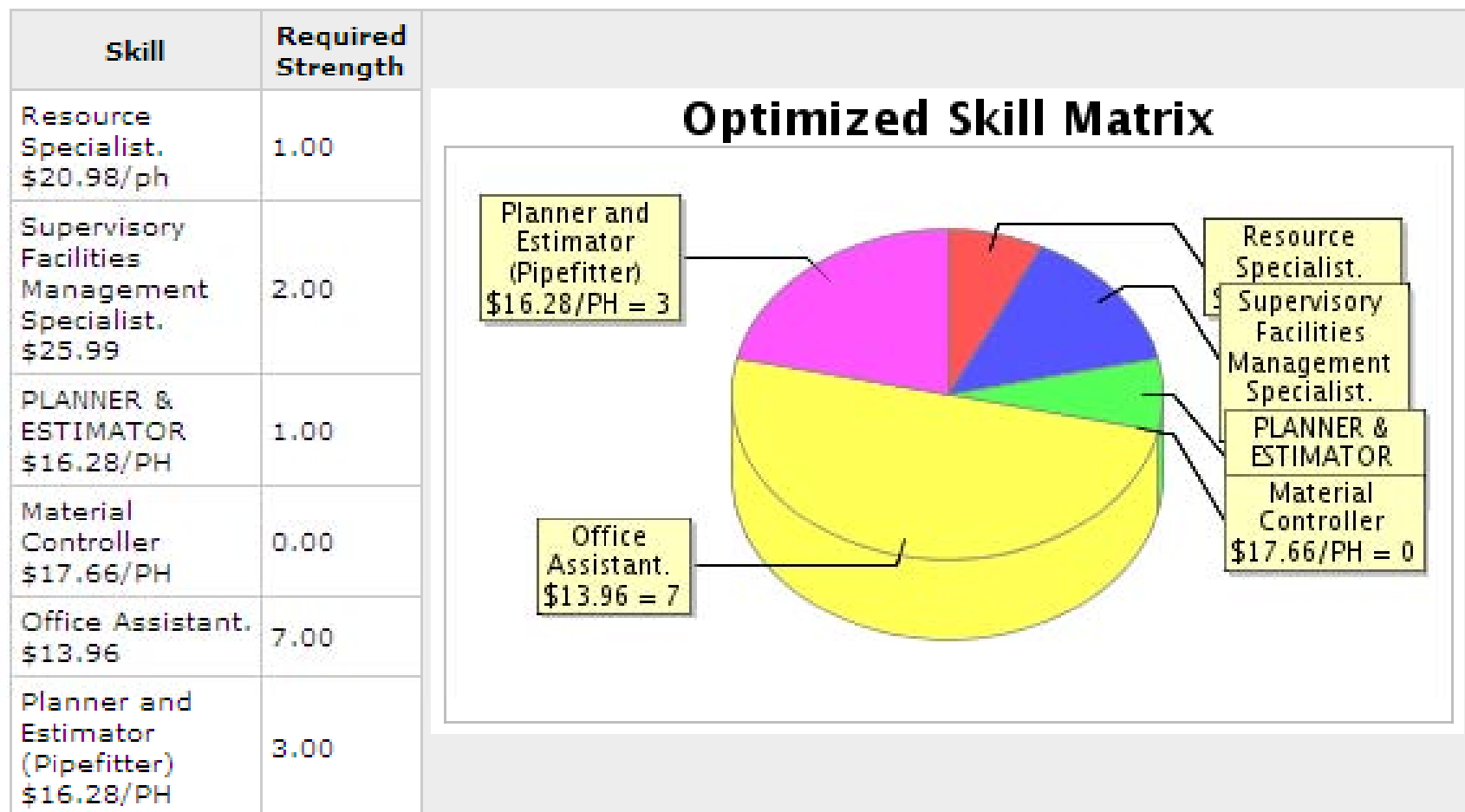
**WorkOutput:**IT: 1.3. A work order processed

Process	CycleTime	Frequency	
IT: 1.3.1.0.0. Process a work order	10.0833	213.0000	
Skill	Hours	Skill%	CalcFTE
Database Support Analsyst II [DSA-02]	1073.8715	50.00	7.4060
Database Support Analyst I [DSA-01]	1073.8715	50.00	7.4060

Skill	Hours	CalcFTE	WholeFTE	WholeCost
Database Support Analyst I [DSA-01]	1169.8637	8.0680	9	36605.25
Database Support Analsyst II [DSA-02]	1133.8715	7.8198	8	34916.00
<b>Total:</b>	<b>2303.7352</b>	<b>15.8878</b>	<b>17</b>	<b>71521.25</b>

# JAWWS™ Functionality

## Optimization Results



# Contact Us

<b>David Juza</b>	<b>James Tillman</b>	<b>Peter Marsh</b>
<p>Principal MEG/HCMG (703)200-5784 <a href="mailto:djuza@itgco.com">djuza@itgco.com</a></p>	<p>Corporate VP MEG (563) 391-0230 <a href="mailto:jtillman@itgco.com">jtillman@itgco.com</a></p>	<p>Principal IPG (901) 849 8288 <a href="mailto:pmarsh@itgco.com">pmarsh@itgco.com</a></p>